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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/027,607

Filing Date: December 19, 2001

Appellant(s): AULL et al.

Christopher P. Harris
Reg. No. 43,660
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/4/2007 appealing from the Office action
mailed 10/6/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct, with the exception of claims 1-6, as these claims were cancelled in the After-final amendment filed 10/23/2006.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2003/0005291	Burn	01-2003
6,490,367	Carlsson et al.	12-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

**Claims 1 and 3-20 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Burn, United States Pub. No. 2003/0005291 and further in view
of Carlsson et al., US Patent No. 6,490,367.**

As per claim 1:

Burn substantially teaches a token issuance and binding process comprising: providing a plurality of tokens, each token having a unique ID number stored therein (par. 6, lines 1-7 and par. 37, lines 1-3); generating a unique public/private key pair for each token (par. 36, lines 8-15); storing each token ID number and corresponding public key in a directory/database (par. 36, lines 16-19); storing each private key in its respective token (par. 36-37 and table 1, field name "User Certificate"); and binding a unique ID number of a user to a corresponding one of the plurality of tokens by storing said correspondence there between in the directory/database (par. 36-37 and fig. 5, element 140).

Not explicitly disclosed is reviewing, by a Tokenizing Officer, credentials of the user and forwarding the user ID number and the token ID number to a CMS (Certificate

Management System) along with an E-form (electronic form) request and signature of the Tokenizing Officer, wherein the Tokenizing Officer comprises a person. However, Carlsson et al. teach reviewing, by a Tokenizing Officer, credentials of the user and forwarding the user ID number and the token ID number to a CMS (Certificate Management System) along with an E-form (electronic form) request and signature of the Tokenizing Officer, wherein the Tokenizing Officer comprises a person (col. 8, lines 12-51). Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Burn to add a Tokenizing Officer, who is a person, to review credentials of a user and to forward the user information to a CMS along with an electronic request form and Tokenizing Officer's signature. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since Carlsson et al. suggest that having a person as the Tokenizing Officer is easy to administer and adds to security because the credentials are checked by someone who is acquainted with the users so it is harder to forge an identity in the binding process in col. 8, lines 20-27.

As per claim 3:

Burn and Carlsson et al. substantially teach the process as applied to claim 1 above. Not explicitly disclosed is the binding further comprising the CMS checking for redundant user tokens and revoking any such user tokens. However, Carlsson et al. teach revoking tokens of individuals when their role has changed in order to do away with redundant certificates, i.e. so that one user does not have two valid certificates with

different roles especially when one of the roles has been revoked. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Burn to incorporate the ability to check and revoke any such tokens that are not distinct. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since Carlsson et al. suggest that it is important that certificates that are invalid are revoked in order to prevent from users gaining access to various objects that they are no longer authorized for in col. 9, lines 14-20.

As per claim 4:

Burn and Carlsson et al. substantially teaches the process as applied to claim 3 above. Furthermore, Carlsson et al. teach the binding further comprising the CMS filling in the E-form from its directory/database and forwarding the filled in E-form to the Tokenizing Officer (col. 8, lines 28-37).

As per claim 5:

Burn and Carlsson et al. substantially teaches the process as applied to claim 4 above. Furthermore, Carlsson et al teach the binding further comprising the Tokenizing Officer reviewing data in filled in E-form and comparing against user credentials and returning same to CMS after signing (col. 8, lines 12-27).

As per claim 6:

Burn and Carlsson et al. substantially teach the process as applied to claim 5 above. Furthermore, Burn teaches generating and wrapping at least a signature certificate/private and associated private key for the user in the unique public key of the

token and returning same to the Tokenizing Officer (par. 44, lines 1-13). Not explicitly disclosed is the binding further comprising the CMS validating the Tokenizing Officer's signature. However, Burn teaches that when the CA receives a message from the HTP it must be decrypted, hence verified. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Burn to incorporate the ability to validate the HTP's signature. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since Burn suggests that validating the Tokenizing Officer's signature is important to ensure that a valid Tokenizing Officer is supplying the user information in par. 44, lines 1-5.

As per claim 7:

Burn and Carlsson et al. substantially teach the process as applied to claim 6 above. Furthermore, Burn teaches the binding further comprising the Tokenizing Officer storing the signature certificate/private key for the user in the token (par. 44, lines 14-21).

As per claim 8:

Burn and Carlsson et al. substantially teach the process as applied to claim 7 above. Not explicitly disclosed is the binding further comprising the user unwrapping the signature certificate/private key using the token private key stored in the token. However, Burn teaches the HTP unwrapping the signature certificate/private key stored in the token. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Burn to instead have the user

unwrap the information in the token. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since Burn suggests that in order to use the certificate it must be able to be decrypted by the private key stored in the token, which is stored therein to ensure that the private key is kept confidential and will not be compromised in par. 44, lines 14-21.

As per claim 9:

Burn and Carlsson et al. substantially teach the process as applied to claim 1 above. Not explicitly disclosed by Burn is the process wherein providing a plurality of tokens comprises providing a plurality of USB (Universal Serial Bus) tokens. However, Burn teaches the use of a hardware token that could be implemented in various ways. Therefore, it would have been obvious to a person in the art at the time the invention was made to modify the method disclosed in Burn to have the hardware tokens comprise of USB tokens. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since Burn suggest that any type of hardware token can be used in par. 46.

As per claim 10:

Burn teaches the process as applied to claim 1 above. Not explicitly disclosed by Burn is the process wherein providing a plurality of tokens comprises providing a plurality of smart cards. However, Burn teaches that a smartcard could be used in an alternate embodiment. Therefore, it would have been obvious to a person in the art at

the time the invention was made to modify the method disclosed in Burn to have the hardware tokens comprise of smartcards. This modification would have been obvious because a person having ordinary skill in the art, at the time the invention was made, would have been motivated to do so since Burn suggests that any type of hardware token can be used, for example a smart card, in par. 31.

As per claim 11:

The limitations in claim 11 are similar in scope to the limitations disclosed in claim 1, thus it is rejected for the same reasons since it is merely the system that implements the rejected method claim.

As per claims 12-20:

The limitations in claims 12-20 are similar in scope to the limitations disclosed in claims 3-10, thus it are rejected for the same reasons since they are merely components of the system that implement the rejected method claims.

(10) Response to Argument

Regarding Claim 1:

Appellant contends that “Burn taken in view of Carlsson does not teach or suggest reviewing, by a Tokenizing Officer, credentials of a user and forwarding a user ID number and a token ID number to a CMS along with an electronic form request and a signature of the Tokenizing Officer, as recited in claim 1.” Examiner respectfully disagrees. Examiner would first like to note that Burn teaches: a unique ID number stored in the token (Fig. 5, element 140: “**USER PIN**” and par. 36, line 6-8: “**In steps 85**

and 90, personal identification numbers (PINs) are randomly generated.”); a unique public/private key pair generated, where the private key is stored in the token (Fig. 4, element 115: “STORE USER CERTIFICATE IN HTP” and par. 36, lines 8-13, where the ‘public key’ is the “certification number” and the ‘private key’ is the “user certificate”); a token ID number (Fig. 5, element 130: “HTP ID #”) stored with the public key (Fig. 5, element 160: “USER CERTIFICATION NUMBER”) in a database (Fig. 5, title: “HTP RECOGNITION TABLE” described in paragraph 38); and finally, where the unique ID number of a user (i.e. the user ID number) is bound to one of a plurality of tokens by storing a correspondence between the two in the directory/database (Fig. 5, elements 130: “HTP ID #” and 140: “USER PIN”). It is also important to note that Burns teaches an enrollment phase wherein all of the above elements are stored in a recognition database in order to register the user as an authenticated user as specified in paragraph 47, lines 13-17: “Also using distinct certificates helps to ensure that the HTP engaged in enrollment is the correct HTP and that no other HTP can inadvertently receive user-specific certificates that are encrypted with a distinct non-user specific certificate.” Thus, Burn teaches that in order to bind the user to a particular HTP (i.e. token), the user must be properly enrolled via a certificate authority using the information from the HTP, in addition to user data in paragraph 41, lines 1-8: “FIG. 7 is a flow diagram that depicts the HTP enrollment process. Once HTPs are initialized, they are distributed to potential new users. Once a user obtains an HTP, that user must engage in an enrollment process that result of which affiliates that user with a particular HTP. Using the user’s own workstation, or any other workstation augmented

with an HTP reader 50, the user must send an enrollment request to the certificate authority (step 220)." Burn was modified by Carlsson et al. since Carlsson et al. specifically mentioned the use of a method which has a Tokenizing Officer, who is a person, validate the user's credentials, then signs and forward those credentials to the Certificate Management System (i.e. CA center) in col. 8, lines 20-37: "***The CA administrator checks that the user is entitled to certification and verifies the user's identity. One of the advantages of the distributed CA architecture is that this stage is easy to administer in a satisfactory manner as regards security. The CA administrator may be reasonably familiar with the users he is to certify, since he/she works with them on a daily basis. The administrator then uses the CA terminal to complete a form with the user information and validity periods which are required in order to create a certificate.*** The CA terminal checks the plausibility of the input information and generates an RSA key pair (keys may optionally be generated in the CA terminal, in the CA centre, in the administrator's card or in the user's card). ***Before certificate data is sent to the CA centre, the certification data is signed, together with the service life and sequence number of the certificate request, by the administrator (using the administrator's card).***" Carlsson et al. thus modifies Burn to not only incorporate a Tokenizing Officer as a middle-man to validate a user's credentials via direct contact, but then forwards the credentials (as disclosed in Burn), which are signed and verified by this Tokenizing Officer to add a level of security in authenticating the user. Carlsson et al. mentions that verifying the user's identity before allowing for the assignment of a certificate is necessary in order to ensure that

only valid users are assigned credentials such as public/private keys and a certificate. Thus, using the information mentioned by Carlsson et al. in combination with the Burn yields the limitation presented in claim 1. Specifically, Burn teaches sending credentials to a CA (where these credentials include information regarding the specific HTP, i.e. token ID number, and user information, i.e. user PIN, in order to bind the user and token together with a certificate that is issued to the user. So, taking that in combination with Carlsson's Tokenizing Officer verifying the user's identity in person and sending the user ID and a sequence number for the certificate (which could be replaced with the token ID number taught in Burn), yields a secure system of authenticating and validating user's before binding their identity to a certificate and a hardware token. The motivation for this combination as provided by Carlsson et al., is that having a person as the Tokenizing Officer is easy to administer and adds to security because the credentials are checked by someone who is acquainted with the users so it is harder to forge an identity in the binding process. Therefore, Burn taken in view of Carlsson does teach/suggest reviewing, by a Tokenizing Officer, credentials of a user and forwarding a user ID number and a token ID number to a CMS along with an electronic form request and a signature of the Tokenizing Officer, as recited in claim 1.

Finally, Examiner would like to note that the test for obviousness is not whether the features of a secondary/tertiary reference(s) may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined

teachings of the references would have suggested to those of ordinary skill in the art.

See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Regarding Claim 3:

Appellant contends, "Burn taken in view of Carlsson does not teach or suggest a CMS checking for redundant user tokens and revoking any such user tokens."

Examiner respectfully disagrees. Burn teaches that an enrollment process is necessary in order to maintain a system where each HTP is associated with one user in paragraph 47, lines 13-17: "***Also using distinct certificates helps to ensure that the HTP engaged in enrollment is the correct HTP and that no other HTP can inadvertently receive user-specific certificates that are encrypted with a distinct non-user specific certificate.***"

Burn also teaches the use of a flag to show whether or not the HTP has been initialized with the elements disclosed above (Fig. 5, element 145:

"INITIALIZED" and page. 4, "Table 1-continued": row for "Initialized"). Carlsson et al. is used to modify Burn since Carlsson et al. go into more specific detail regarding revocation. Specifically, Carlsson et al. teach that a CA administrator manages user cards and has the ability to revoke a card, i.e. token, if a circumstance necessitating that revocation occurs in col. 7, lines 65-67: "***In addition, the administrator will make the cards unusable (destroy them) when the stored certificate is revoked.***" Carlsson et al. also suggest that certificates are revoked for various reasons, including that a certain role is no longer available to a user in order to do away with redundant certificates per user in col. 9, lines 14-20: "***A certificate is revoked (=declared invalid) when the certificate has become invalidated for some reason. This can occur, for example***

when a user has dies, has been found to be unreliable, or his/her role has changed. Before the CA administrator revokes a user's certificate, a check will be made according to the administrative rules of the organization." Thus, based on the previous two passages cited, a certificate may be revoked when a user's role changes in order to prevent from one user being authorized to do several tasks (some of which have been completed) at one time or is deemed unreliable, where a token may be revoked/destroyed for any of the above reasons. Carlsson et al. further suggest various other administration tasks which a CA administrator is responsible for carrying out, including the prevention of unauthorized users gaining access to tokens not assigned to them (col. 17, lines 7-35). Thus, it would have been obvious to modify the method disclosed by Burn and Carlsson et al. from claim 1 to incorporate a means of checking the token ID number and flags of the tokens (disclosed in Burn) against other tokens and revoking tokens which are no longer valid since the user's certificate has been revoked (disclosed in Carlsson et al.). One would have been motivated to modify the method disclosed since Carlsson et al. suggest that it is important that certificates that are invalid are revoked in order to prevent from users gaining access to various objects that they are no longer authorized for in col. 9, lines 14-20. Thus, Burn taken in view of Carlsson does teach/suggest a CMS checking for redundant user tokens and revoking any such user tokens.

Regarding Claim 11:

Appellant contends that "Burn taken in view of Carlsson does not teach or suggest reviewing, by a Tokenizing Officer, credentials of a user and forwarding a user

ID number and a token ID number to a CMS along with an electronic form request and a signature of the Tokenizing Officer, as recited in claim 11.” Examiner respectfully disagrees. Examiner would first like to note that Burn teaches: a unique ID number stored in the token (Fig. 5, element 140: “**USER PIN**” and par. 36, line 6-8: “*In steps 85 and 90, personal identification numbers (PINs) are randomly generated.*”); a unique public/private key pair generated, where the private key is stored in the token (Fig. 4, element 115: “**STORE USER CERTIFICATE IN HTP**” and par. 36, lines 8-13, where the ‘public key’ is the “**certification number**” and the ‘private key’ is the “**user certificate**”); a token ID number (Fig. 5, element 130: “**HTP ID #**”) stored with the public key (Fig. 5, element 160: “**USER CERTIFICATION NUMBER**”) in a database (Fig. 5, title: “**HTP RECOGNITION TABLE**” described in paragraph 38); and finally, where the unique ID number of a user (i.e. the user ID number) is bound to one of a plurality of tokens by storing a correspondence between the two in the directory/database (Fig. 5, elements 130: “**HTP ID #**” and 140: “**USER PIN**”). It is also important to note that Burns teaches an enrollment phase wherein all of the above elements are stored in a recognition database in order to register the user as an authenticated user as specified in paragraph 47, lines 13-17: “*Also using distinct certificates helps to ensure that the HTP engaged in enrollment is the correct HTP and that no other HTP can inadvertently receive user-specific certificates that are encrypted with a distinct non-user specific certificate.*” Thus, Burn teaches that in order to bind the user to a particular HTP (i.e. token), the user must be properly enrolled via a certificate authority using the information from the HTP, in addition to user data in paragraph 41, lines 1-8: “*F/G. 7 is a*

flow diagram that depicts the HTP enrollment process. Once HTPs are initialized, they are distributed to potential new users. Once a user obtains an HTP, that user must engage in an enrollment process that result of which affiliates that user with a particular HTP. Using the user's own workstation, or any other workstation augmented with an HTP reader 50, the user must send an enrollment request to the certificate authority (step 220)." Burn was modified by Carlsson et al. since Carlsson et al. specifically mentioned the use of a system which has a Tokenizing Officer, who is a person, validate the user's credentials, then signs and forward those credentials to the Certificate Management System (i.e. CA center) in col. 8, lines 20-37: "***The CA administrator checks that the user is entitled to certification and verifies the user's identity. One of the advantages of the distributed CA architecture is that this stage is easy to administer in a satisfactory manner as regards security. The CA administrator may be reasonably familiar with the users he is to certify, since he/she works with them on a daily basis. The administrator then uses the CA terminal to complete a form with the user information and validity periods which are required in order to create a certificate. The CA terminal checks the plausibility of the input information and generates an RSA key pair (keys may optionally be generated in the CA terminal, in the CA centre, in the administrator's card or in the user's card). Before certificate data is sent to the CA centre, the certification data is signed, together with the service life and sequence number of the certificate request, by the administrator (using the administrator's card).***" Carlsson et al. thus modifies Burn to not only incorporate a Tokenizing Officer as a middle-man to validate a

user's credentials via direct contact, but then forwards the credentials (as disclosed in Burn), which are signed and verified by this Tokenizing Officer to add a level of security in authenticating the user. Carlsson et al. mentions that verifying the user's identity before allowing for the assignment of a certificate is necessary in order to ensure that only valid users are assigned credentials such as public/private keys and a certificate. Thus, using the information mentioned by Carlsson et al. in combination with the Burn yields the limitation presented in claim 11. Specifically, Burn teaches sending credentials to a CA (where these credentials include information regarding the specific HTP, i.e. token ID number, and user information, i.e. user PIN, in order to bind the user and token together with a certificate that is issued to the user. So, taking that in combination with Carlsson's Tokenizing Officer verifying the user's identity in person and sending the user ID and a sequence number for the certificate (which could be replaced with the token ID number taught in Burn), yields a secure system of authenticating and validating user's before binding their identity to a certificate and a hardware token. The motivation for this combination as provided by Carlsson et al., is that having a person as the Tokenizing Officer is easy to administer and adds to security because the credentials are checked by someone who is acquainted with the users so it is harder to forge an identity in the binding process. Therefore, Burn taken in view of Carlsson does teach/suggest reviewing, by a Tokenizing Officer, credentials of a user and forwarding a user ID number and a token ID number to a CMS along with an electronic form request and a signature of the Tokenizing Officer, as recited in claim 11.

Finally, Examiner would like to note that the test for obviousness is not whether the features of a secondary/tertiary reference(s) may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Regarding Claim 13:

Appellant contends, "Burn taken in view of Carlsson does not teach or suggest that a user cannot possess more than one personalized card (e.g. token)." Examiner respectfully disagrees. Burn teaches that an enrollment process is necessary in order to maintain a system where each HTP is associated with one user in paragraph 47, lines 13-17: "***Also using distinct certificates helps to ensure that the HTP engaged in enrollment is the correct HTP and that no other HTP can inadvertently receive user-specific certificates that are encrypted with a distinct non-user specific certificate.***" Burn also teaches the use of a flag to show whether or not the HTP has been initialized with the elements disclosed above (Fig. 5, element 145: "***INITIALIZED***" and page. 4, "Table 1-continued": row for "Initialized"). Carlsson et al. is used to modify Burn since Carlsson et al. go into more specific detail regarding revocation. Specifically, Carlsson et al. teach that a CA administrator manages user cards and has the ability to revoke a card, i.e. token, if a circumstance necessitating that revocation occurs in col. 7, lines 65-67: "***In addition, the administrator will make the cards unusable (destroy them) when the stored certificate is revoked.***" Carlsson et al.

also suggest that certificates are revoked for various reasons, including that a certain role is no longer available to a user in order to do away with redundant certificates per user in col. 9, lines 14-20: "**A certificate is revoked (=declared invalid) when the certificate has become invalidated for some reason. This can occur, for example when a user has dies, has been found to be unreliable, or his/her role has changed.**" Before the CA administrator revokes a user's certificate, a check will be made according to the administrative rules of the organization." Thus, based on the previous two passages cited, a certificate may be revoked when a user's role changes in order to prevent from one user being authorized to do several tasks (some of which have been completed) at one time or is deemed unreliable, where a token may be revoked/destroyed for any of the above reasons. Carlsson et al. further suggest various other administration tasks which a CA administrator is responsible for carrying out, including the prevention of unauthorized users gaining access to tokens not assigned to them (col. 17, lines 7-35). Thus, it would have been obvious to modify the system disclosed by Burn and Carlsson et al. from claim 12 to incorporate a means of checking the token ID number and flags of the tokens (disclosed in Burn) against other tokens and revoking tokens which are no longer valid since the user's certificate has been revoked (disclosed in Carlsson et al.). One would have been motivated to modify the system disclosed since Carlsson et al. suggest that it is important that certificates that are invalid are revoked in order to prevent from users gaining access to various objects that they are no longer authorized for in col. 9, lines 14-20. Thus, Burn taken in view of

Carlsson does teach/suggest a CMS checking for redundant user tokens and revoking any such user tokens.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Nadia Khoshnoodi



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